

# Letter to the Editor

## Routine Culturing of Stool Specimens for *Yersinia enterocolitica*

The sweeping conclusion of Kachoris et al. (3) that routine culturing of stool specimens for *Yersinia enterocolitica* is not a cost-effective procedure concerns us. We wish to recommend that the word procedure be followed by "from our patient population in Boston, Mass." The authors mentioned the variability of isolation rates reported by three groups of investigators and referred to Weissfeld's comments that geographical variations of *Y. enterocolitica* isolation rates do occur but failed to elaborate upon this phenomenon in their population.

Since June 1982, our laboratory has used cefsulodin-Irgasan-novobiocin (CIN) agar (Oxoid Ltd., Basingstoke, England; or Prepared Media Laboratories, Richmond, British Columbia, Canada) and cold enrichment to isolate *Yersinia* spp. After examining 6,209 fecal specimens, 415 *Yersinia* spp. have been recovered. More than 7% of the samples and 10.8% of symptomatic patients have been positive. On a yearly basis, our isolation rate has been consistent since we began culturing. Although the majority of our isolates have come from cold enrichment, many of them appear to be clinically relevant (2, 3a-5). In comparison, 4% of all specimens and 5% of all patients have been culture positive with *Campylobacter* spp.

Our methodology differs from that of Kachoris et al. (3) in that CIN plates are incubated at 35°C, not at 28°C; and for only 18 to 24 h, not 48 h or longer. After 18 to 24 h of incubation our technologists have no difficulty in picking small (1- to 1.5-mm) typical red bull's-eye colonies for identification. Other enteric organisms are larger at this temperature and generally would not be picked. All of our biochemical identification tests are incubated at 28°C. *Yersinia* spp. are more active metabolically between 22 and 28°C; thus, biochemical interpretations are most reliable when incubation is at 28°C rather than at 37°C (1). Although we have no firsthand experience with the Vitek system, as the authors do, we suspect that any system which requires a 37°C incubation for identification may possibly yield unreliable results for *Yersinia* spp.

Prior to the development of CIN medium, only 48 isolates of *Yersinia* spp. were reported from British Columbia, Canada, from 1966 to 1978 (6). In fact, regional differences in the isolation rate of *Yersinia* spp. still exist, both within the province of British Columbia and even the city of Vancouver, despite a uniformity of technique. For our primarily adult patient population, we can only conclude that the routine culturing of feces specimens for *Y. enterocolitica* is both clinically relevant and cost-effective. Other laboratories should be encouraged, not discouraged as Kachoris et al. (3) suggest, to search for this organism in their own populations and draw their own conclusions as to the cost-effectiveness of a CIN plate in their routine stool-screening procedure.

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### Author's Reply

We agree that our findings on isolation of *Yersinia enterocolitica* from stool specimens may not be applicable to other geographical areas. While variation in reported isolation rates of *Y. enterocolitica* is a well-documented phenomenon, a second major cost-related point made in our article (appearing in the abstract and text) is that when the expected prevalence of *Yersinia* species is low additional planting of all stools on a medium selective for *Yersinia* species is not warranted due to the small increase in yield with cefsulodin-Irgasan-novobiocin (CIN) agar versus a MacConkey plate incubated first at 35°C and then at room temperature. We continue to screen all stool specimens for *Yersinia* species by this more cost-effective method and use CIN agar only when *Yersinia* cultures are specifically requested.

The Vitek system has been reported to be an accurate method for *Y. enterocolitica* identification (3). In our study, all colonies from 3,122 of the 3,622 cultures examined were screened on nutrient agar at 35°C, and all of the small colony-forming strains of the family *Enterobacteriaceae* examined by this method were identified as *Y. enterocolitica* by the Vitek system. Thus, we feel confident that no *Yersinia* isolates were missed due to misidentification.

While the authors of the letter note that *Yersinia* spp. are metabolically more active at lower temperatures, they fail to note that the optimum growth temperature for these organisms is also less than 35°C (1). This explains the recommendations of the manufacturer of the CIN agar used in our study and the observations of Head et al. (2) and Schiemann (4) concerning lowered incubation temperatures for CIN agar plates used as a primary isolation medium for *Yersinia* spp.

Decisions on whether to implement or discontinue any laboratory procedure should be based on the diagnostic value of the test. Each laboratory should consider parameters such as sensitivity, specificity, prevalence, speed, and the costs associated with false-negative or false-positive results in making its decision.

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